

Panel Discussion - Fuels

November 09, 2004

California Environmental Protection Agency



Air Resources Board

Panel Discussion

- ✦ Permeation Study
- ✦ Near Term Issues
- ✦ Long Term Issues

Permeation Study

Coordinating Research Council - E65

Test Description

- ✦ 10 vehicles typical of CA in-use fleet (1978-2001 Model Year)
- ✦ 3 CARB fuels:
 - Fuel A: MTBE
 - Fuel B: Ethanol at 2 wt% oxygen
 - Fuel C: non-oxy.
- ✦ Test rigs hold fuel system components in same orientation as on vehicle .
 - Stabilize rigs at 105°F
 - Measure permeation at 105°F, 85°F, and CA 2-day diurnal

Test Results

- ✦ Permeation increased from all 10 vehicles with a change from the MTBE fuel to the ethanol fuel
- ✦ On average, ethanol increased permeation emissions :
 - by 65% compared to MTBE gasoline
 - by 45% compared to non-oxygenated gasoline
- ✦ Permeation increases, on average, by 1.4 g/day with a change from MTBE fuel to ethanol fuel, and decreases, on average, by 1.1 g/day with a change from ethanol to non-oxygenated fuel

Emissions

- ✦ CRC results do not directly provide the emissions impact of permeation
- ✦ Vehicle activity data and equipment temperatures must be integrated to provide an appropriate temporal and spatial distribution of emissions.

Near Term Issues

Near Term Issues

- ✦ Further reduction in emissions
 - Limited ability to meet more stringent fuel specifications due to concerns over impacts on price, supply, and cost effectiveness.
- ✦ Predictive Model Update - Calendar Year 2005
 - Data set availability?

Near Term Issues

- ✦ California Waiver Request
- ✦ National Renewable Fuels Requirement

Long Term Issues

CaRFG Long Term Issues

- ✦ National fuel should at least preserve the emissions benefits of California fuel
- ✦ Support the needs of extremely low emissions and near zero emissions vehicles

What are the Desired Goals for National Fuel Standards

- ✦ Oil Industry
 - Provide regulatory certainty,
 - Increase fungibility and flexibility
- ✦ Auto Industry
 - Resolve technology needs: (Sulfur, fuel volatility)
- ✦ Environment
 - Preserve/enhance emission benefits
- ✦ Oxygenates
 - Change from RFG mandate to renewable fuels specification

Nationwide Clean Diesel Program

- ✦ Need better quality fuel for success of new diesel engine technologies
 - Need more than low sulfur standard
 - Need improved aromatics and cetane quality